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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/062,200	10/29/2001	Teresa Lechner-Fish	1787-10100	9865

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EXAMINER
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CYGAN, MICHAEL T

ART UNIT	PAPER NUMBER
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2855

DATE MAILED: 03/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/062,200

Applicant(s)

LECHNER-FISH, TERESA

Examiner

Michael Cygan

Art Unit

2855

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-12,14-18 and 20-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,3-12 and 14-17 is/are allowed.
- 6) ☒ Claim(s) 18 and 20-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Potts (US 4,772,296) in view of applicant's admitted prior art (Figure 4).  
Potts teaches a gas chromatograph [4] comprising separation columns [42,44] heated (column 6 lines 50-53) to a desired temperature, a second heater (column 6 lines 50-53) for heating a carrier stream to a desired temperature which is about ten degrees higher than the column temperature (column 6 lines 29-49), a means [56] for cooling the carrier gas stream to a third desired temperature, wherein each of the components is contained within the gas chromatograph housing [4]. Back pressure restriction means [36] are provided upstream of the column and the point of mixing with the feedstream (Figure 1). Potts further teaches a method to analyze a sample comprising heating a carrier gas stream for a gas chromatograph to a temperature about 10 degrees higher than a column temperature and measuring constituent concentrations for the sample; a backpressure

restrictor [36] is placed upstream of the column. See column 6 line 9+, column 7 lines 44-52, and column 8 lines 55+.

Potts teaches the claimed invention except for the use of a valve switch connected upstream of the column and downstream of both sample and carrier gas sources. Applicant admits the use of a valve switch connected upstream of the column and downstream of both sample and carrier gas sources (Figure 4). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a valve switch connected upstream of the column and downstream of both sample and carrier gas sources as taught by applicant's admitted prior art in the invention taught by Potts to form the sample introduction valve (i.e., replacing the valve [16] of Potts with the valve [410] of applicant's prior art placed at junction [38] of Potts, thus placing both carrier and sample feedstreams upstream of the sample valve), since both Potts and applicant's admitted prior art use a valve switch to cause the formation of a sample plug for compositional analysis, and the valve of Figure 4 provides a compact plug for analysis which does not suffer the spreading caused by two concurrently interacting gas flows (as in the junction [38] of Potts' Figure 1). This would position the check valve [36] upstream of the valve switch [410].

2. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Potts (US 4,772,296) in view of applicant's admitted prior art as applied to claim 22, further in view of Karas (US 4,095,455). Potts teaches the claimed invention except for a backpressure regulator downstream of a capillary column. Karas teaches the use of a backpressure regulator downstream of a capillary column in a gas chromatograph having a pneumatic detector (Figure 1).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a pneumatic detector comprising a backpressure regulator downstream of a capillary column as taught by Karas in the invention of Potts to regulate the pressure in the device, since Karas teaches that the pneumatic detector does not have the drawbacks (cost, inadequate reliability, potential danger) of the detection device of Potts (thermal conductivity detector); see Karas column 1, lines 30+.

3. Claims 23 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Potts (US 4,772,296) in view of applicant's admitted prior art as applied to claim 1, further in view of Sacks (US 5,205,845). Potts teaches the claimed invention, including additional valves [51,53] except for the use of capillary tubing as the backpressure restrictor (i.e., 36).

Sacks teaches the use of capillary tubes as backpressure regulators for a carrier gas stream in a gas chromatograph (column 5 lines 3-7). It would have been obvious to one having ordinary skill in the art at the time

the invention was made to use capillary tubing as taught by Sacks as the backpressure restrictor in the invention of Potts to form the backpressure restrictor, since such tubing has no moving parts and would be more accurate in the restriction and less susceptible to failure.

4. Claims 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Potts (US 4,772,296) in view of Jennings (US 4,035,168). Potts teaches a method to analyze a sample comprising heating a carrier gas stream for a gas chromatograph to a temperature about 10 degrees higher than a column temperature and measuring constituent concentrations for the sample; a backpressure restrictor [36] is placed upstream of the column. See column 6 line 9+, column 7 lines 44-52, and column 8 lines 55+. Potts teaches the claimed method except for maintaining a constant carrier flow upstream of column. Jennings teaches a gas chromatography system having a pressure and flow rate control of the carrier gas; see Figure 1 and column 4 line 64 through column 5 line 3. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use pressure and flow rate control of the carrier gas as taught by Jennings in the invention of Potts to control the carrier flow, since reduction of flow errors translates directly into reduction of output peak time measurement errors.

5. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Potts (US 4,772,296) in view of Jennings (US 4,035,168) as applied to claim 18, further in view of Karas (US 4,095,455). Potts teaches the claimed invention except for a backpressure regulator downstream of a capillary column. Karas teaches the use of a backpressure regulator downstream of a capillary column in a gas chromatograph having a pneumatic detector (Figure 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a pneumatic detector comprising a backpressure regulator downstream of a capillary column as taught by Karas in the invention of Potts to regulate the pressure in the device, since Karas teaches that the pneumatic detector does not have the drawbacks (cost, inadequate reliability, potential danger) of the detection device of Potts (thermal conductivity detector); see Karas column 1, lines 30+.

***Allowable Subject Matter***

6. Claims 1, 3-12, and 14-17 are allowed.
7. The following is a statement of reasons for the indication of allowable subject matter: the claims are deemed to be directed towards unobvious improvement over the invention patented in U. S. Patent Number 4,772,296, wherein the improvement comprises a backpressure restrictor being suitable

to maintain a pressure ratio of less than or equal to about 0.528 in combination with the other claimed limitations.

### ***Response to Arguments***

8. Applicant's arguments with respect to claims 18, 20, and 21 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.



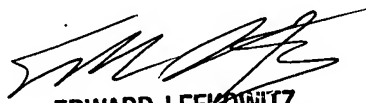
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Cygan whose telephone number is (571) 272-2175. The examiner can normally be reached on 8:30-6 M-Th, alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on 571-272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Michael Cygan  
Examiner  
Art Unit 2855



**EDWARD LEFKOWITZ**  
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